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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,353	10/11/2001	Amy W. Lasek	PA-0038 US	6892

27904 7590 08/12/2003

INCYTE CORPORATION (formerly known as Incyte
Genomics, Inc.)
3160 PORTER DRIVE
PALO ALTO, CA 94304

EXAMINER

MARTINELL, JAMES

ART UNIT	PAPER NUMBER
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1631

10

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,353

Applicant(s)

LASEK ET AL.

Examiner

James Martinell

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: _____

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Applicant's election of Group I in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Applicants' response (paper no. 9) did not address the aspects of the requirement for restriction between Groups I and VI, VII, and VIII and so the election is treated as an election without traverse in connection with the independence and distinctness of Groups I and VI-VIII as outlined in the Office action mailed May 2, 2003. Applicants' arguments in connection with rejoining Groups I and II is not persuasive because Group II claims a combination of SEQ ID NOs that is different from the elected combination.

Claims 2 and 13-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

Applicants' arguments in connection with rejoining claims 4-12 with Group I, claims 1 and 3, is persuasive. Thus, claims 4-12 are hereby rejoined with claims 1 and 3 to make up Group I. Claims 1 and 3-12 are examined in this Office action. The combination examined includes the combinations containing each one of SEQ ID NOs: 24, 47, 81, 104, 114, 165, and 172 (see paper no. 9, paragraph bridging pages 6-7). SEQ ID NOs: 24, 47, 81, 104, 114, 165, and 172 have been searched (see MPEP 803.04 (pages 800-10 and 11, August 2001 edition) in connection with USPTO search procedures for nucleotide sequence combination claims).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 3-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are vague, indefinite, incomplete, misdescriptive, and inaccurate.

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- (a) The recitation of "cDNAs that are differentially expressed" (claim 1) is inaccurate and misdescriptive because cDNAs are not expressed, but are artificial constructs (*e.g.*, see the definition in Lewin).
- (b) Claim 1 is vague and indefinite because it includes more combinations than the elected combinations (*e.g.*, see paper no. 9, paragraph bridging pages 6-7).
- (c) The recitation of "that disease" (claim 6) is incomplete because there is no antecedent basis for the term.
- (d) The recitation of "specifically binds" (claim 7) is vague, indefinite, and incomplete because the term is a relative one and no frame of reference is given. The determination or characterization of specific binding requires knowledge or disclosure of other potential binding partners in the reaction mixture. None is given or mentioned; thus the claim is vague, indefinite, and incomplete.
- (e) The recitation of "specific binding" (claim 7) is vague, indefinite, and incomplete for reasons given in (c) immediately above.
- (f) The recitation of "mimetics" (claim 8) is vague and indefinite because it is not clear what is meant by the term.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 and 3-12 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. The instant application does not disclose a nexus between any particular or anticipated hybridization results to SEQ ID NOs: 24, 47, 81, 104, 114, 165, and 172 and any disease state or non-disease state. The hybridization data shown in Table 1 and discussed on pages 9-10 of the instant application are not results of actual gene expression because they are disclosed as being cDNAs that hybridize to an array. Since cDNAs are artificial constructs, they do not necessarily reflect levels of

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expression of genes. In addition, SEQ ID NO 47 (Clone ID 1695477) is not expressed in polyp or tumor cells at half the level of that of normal cells as is stated in the application in the paragraph bridging pages 9-10 (average downregulation according to Table 1 (page 2 line 19) is -1.07). Likewise, SEQ ID NO: 104 (Clone ID 2132203 is downregulated by an average of -1.48 (Table 1, page 3, line 33) and SEQ ID NO: 114 (Clone ID 2513883) is downregulated by an average of -1.39 (Table 1, page 2, line 27). No data for SEQ ID NO: 172 (Clone ID 1846463) are seen in Table 1 at all. Finally, the application does not disclose how the cDNA measurements were made.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 3-12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The discussion in the rejection under 35 USC § 101 hereinabove is incorporated here. In addition, claim 1 is not enabled in its full breadth for reciting "differentially expressed in a colon disorder" because the instant application does not enable diagnosis of any colon disorder.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9-12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by either one of Hillman et al ((WO 99/41375 (August 19, 1999)) or Gunn et al (WO 98/38203 (September 3, 1998)). Hillman et al discloses a DNA that is 100% identical to SEQ ID NO: 81 of the instant application (see "Alignment Hillman" attached to this Office action). The abstract and pages 32-35 of Hillman et al teach the heterologous expression of the DNA. Thus, the claims embrace the polynucleotide, vectors, host cells, and method of making a polypeptide taught in Hillman et al. Gunn et al discloses a DNA that is 96.5% identical to SEQ ID NO: 172 of the instant application (see "Alignment Gunn" attached to this Office action). Page 10, lines 7-20 and page 21, line 24 through page 24, line 21 32-35 of Gunn et al teach the heterologous expression of the DNA. Thus, the claims embrace the polynucleotide, vectors, host cells, and method of making a polypeptide taught in Gunn et al.

Claims 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Bandman et al (U.S. Patent No. 6,132,964).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claims 9-12 are directed to an invention not patentably distinct from claims 5-10 of commonly assigned U.S. Patent No. 6,132,964. Specifically, SEQ ID NO: 13 of U.S. Patent No. 6,132,964 is the same as SEQ ID NO: 47 of the instant claims.

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Claims 9-12 are rejected under 35 U.S.C. 103(a) as being obvious over Bandman et al (U.S. Patent No. 6,132,964).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2). Bandman et al discloses a DNA (SEQ ID NO: 13) that is 100% identical to SEQ ID NO: 47 of the instant application (see "Alignment Bandman" attached to this Office action). Column 19, line 7 through column 22, line 38 of Bandman et al teach the heterologous expression of the DNA. Thus, the claims embrace the polynucleotide, vectors, host cells, and method of making a polypeptide taught in Bandman et al.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 9-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 5-10 of U.S. Patent No. 6,132,964. Although the conflicting claims are not identical, they are not patentably distinct from each other because SEQ ID NO: 13 of U.S. Patent No. 6,132,964 is the same as SEQ ID NO: 47 of the instant claims.

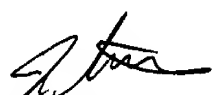
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Martinell whose telephone number is (703) 308-0296. The fax phone number for Examiner Martinell's desktop workstation is (703) 746-5162. The examiner works a flexible schedule and can be reached by phone and voice mail. Alternatively, a request for a return telephone call may be e-mailed to james.martinell@uspto.gov. Since e-mail communications may not be secure, it is suggested that information in such requests be limited to name, phone number, and the best time to return the call.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached on (703) 305-4028.

Please take note of this new Official Fax Phone Number

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.


James Martinell, Ph.D.
Primary Examiner
Art Unit 1631

Alignment Hillman 1/2

OW nucleic - nucleic search, using sw model
Run on: July 16, 2003, 03:41:41 ; Search time 224.967 Seconds
(without alignments)
13183.634 Million cell updates/sec

Title: US-09-981-353-81
Perfect score: 1317
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Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 2185239 seqs, 1125999159 residues

Total number of hits satisfying chosen parameters: 4370478

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
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2	1108	84.1	1141	21	Human colon specif
3	1084.4	82.3	1291	21	Human secreted pro
4	1079	81.9	1292	21	Human secreted pro
5	712.8	54.1	854	23	DNA encoding novel
6	389.6	29.6	441	21	Human colon cancer
7	303.6	23.1	351	22	Novel human diagno
8	292.6	22.2	342	22	Novel human diagno
9	291.2	22.1	373	22	Novel human polynu

10	288.6	21.9	383	22	AAS37423	Novel human diagno
11	276	21.0	370	22	AAF65997	Novel human polynu
12	81.2	6.2	1236	21	AAV48114	Nucleotide sequenc
13	81.2	6.2	1336	21	AAZ51573	Human cell surface
14	81.2	6.2	1336	24	ABK39631	cDNA encoding 1985
15	81.2	6.2	1374	21	AAC99077	Human pancreatic c
16	81.2	6.2	1375	24	ABL00599	Human polynucleoti
17	79.6	6.0	861	24	ABK39776	DNA encoding Ral2S
18	79.6	6.0	1353	24	ABK39775	DNA encoding Ral2-
19	79.6	6.0	1353	24	ABK39774	cDNA encoding lung
20	74.8	5.7	932	22	AAI19723	Dendritic cell (DC
21	74.8	5.7	945	19	AAV59668	Human secreted pro
22	74.8	5.7	1001	21	AAZ52580	Dendritic cell (DC
23	74.8	5.7	1036	22	ABA19722	Human secreted pro
24	74.8	5.7	1106	22	ABA09233	Human secreted pro
25	74.8	5.7	1106	22	AAH99750	Human hHAIRBs-Iso
26	74.8	5.7	1108	22	AAF63724	Human cell surface
27	74.8	5.7	1289	22	AAH79291	Human breast tumou
28	74.8	5.7	1488	20	AAZ33586	Human receptor pro
29	74.8	5.7	1522	20	AAZ06369	Human secreted pro
30	74.8	5.7	1570	21	AAA26426	Human secreted pro
31	74.8	5.7	1728	24	ABK34885	Human cDNA encodin
32	74.8	5.7	1743	21	AAF18295	Lung cancer associ
33	74.8	5.7	1871	22	AAH35024	Human colon cancer
34	74.8	5.7	1871	24	ABL00750	Human polynucleoti
35	74.8	5.7	2192	21	AAA27130	Human inflammation
36	74.8	5.6	648	24	ABQ58726	Human colon cancer
37	72	5.5	1060	20	AAZ97730	Extended human sec
38	71.2	5.4	2545	11	AAQ04645	Encodes beta subun
39	71.2	5.4	2545	12	AAQ14734	Encodes beta subun
40	71.2	5.4	2545	14	AAQ51021	Human FcE1 beta g
41	69.2	5.3	708	22	AAF77694	Murine wild-type F
42	61.2	4.6	999	22	AAH99112	Human EST-derived
43	61.2	4.6	1025	23	AAZ76894	DNA encoding novel
44	60	4.6	60	24	ABN38453	Human spliced tran
45	60	4.6	489	24	ABL38455	Human colon tumour

ALIGNMENTS

RESULT 1	AAZ06368	standard; DNA; 1317 BP.
ID	AAZ06368	
AC	AAZ06368	
DT	26-OCT-1999	(first entry)
DE	Human receptor protein (HURP) 3 nucleotide sequence.	
KW	receptor; cancer; autoimmune disorder; inflammation;	
KW	antagonist; cell surface protein; cell signalling;	
KW	antibody; ds.	
OS	Homo sapiens.	
FX	Key	Location/Qualifiers
FT	CDS	221..1024
ET		/*tag= a
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XX	W09941375-A2.	
XX	19-AUG-1999.	
XX	05-FEB-1999;	99WO-US02572.
XX	12-FEB-1998;	98US-0022939.
XX	(INCY-) INCYTE PHARM INC.	
XX	Au-Young J; Bandman O, Baughn M, Corley NC, Guegler KJ;	

Alignment Bandman 1/2

GenCore version 5.1.6
Copyright (c) 1993 - 2003 CompuGen Ltd.

OM nucleic - nucleic search, using sw model

Run on: June 28, 2003, 02:03:25 ; Search time 3016.51 Seconds
(without alignments)
17018.784 Million cell updates/sec

Title: US-09-981-353-47

Perfect score: 1764

Sequence: 1 ctgaggctgacggtccgag.....tgaaaaaaaaaaaaaagg 1764

Scoring table: IDENTITY NUC

Gapop 10.0 , Gapext 1.0

Searched: 2054640 seqs, 14551402878 residues

Total number of hits satisfying chosen parameters: 4109280

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

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3: gb_in.*

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8: gb_pl.*

9: gb_pr.*

10: gb_ro.*

11: gb_sts.*

12: gb_sy.*

13: gb_un.*

14: gb_vi.*

15: em_ba.*

16: em_fun.*

17: em_hum.*

18: em_in.*

19: em_mu.*

20: em_om.*

21: em_or.*

22: em_ov.*

23: em_pat.*

24: em_ph.*

25: em_pl.*

26: em_ro.*

27: em_sts.*

28: em_un.*

29: em_vi.*

30: em_htg_hum.*

31: em_htg_inv.*

32: em_htg_other.*

33: em_htg_mus.*

34: em_htg_pln.*

35: em_htg_rod.*

36: em_htg_mam.*

37: em_htg_vrt.*

38: em_sy.*

39: em_htgo_hum.*

40: em_htgo_mus.*

41: em_htgo_other.*

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	1764	100.0	1764	6	AR113044	AR113044 Sequence
2	1743.2	98.8	1768	9	BC018999	BC018999 Homo sapi
3	1740.2	98.7	1760	9	AK000184	AK000184 Homo sapi
4	1723	97.7	1746	6	AX281695	AX281695 Sequence
5	1360.4	77.1	1362	6	AX301999	AX301999 Sequence
6	993.4	56.3	1758	6	AX305693	AX305693 Sequence
7	993.4	56.3	1758	10	MMASML3A	Y08135 M. musculus
8	856.6	48.6	863	6	AX329813	AX329813 Sequence
9	856.6	48.6	863	6	AX330318	AX330318 Sequence
10	856.6	48.6	863	9	HSASML3A	Y08136 H. sapiens m
11	816.4	46.3	1095	6	AX302000	AX302000 Sequence
12	628.2	35.6	181342	2	AC023556	AC023556 Homo sapi
13	553.2	31.4	559	6	AX385445	AX385445 Sequence
14	536.8	30.4	540	6	AX386014	AX386014 Sequence
15	252.4	14.3	359	6	AX260953	AX260953 Sequence
16	243.8	13.8	1510	6	AX247505	AX247505 Sequence
17	243.8	13.8	1610	6	AX332610	AX332610 Sequence
18	243.8	13.8	1610	6	AX335855	AX335855 Sequence
19	243.8	13.8	1610	9	HSASML3B	Y08134 H. sapiens m
20	242.6	13.8	1489	6	AX247501	AX247501 Sequence
21	235.4	13.3	1948	10	BC009087	BC009087 Mus muscu
22	218.2	12.4	122974	2	AC025114	AC025114 Homo sapi
23	218.2	12.4	214308	2	AL732434	AL732434 Homo sapi
24	210	11.9	1566	9	BC014444	BC014444 Homo sapi
25	187.2	10.6	181342	2	AC023556	AC023556 Homo sapi
26	147	8.3	2350	9	AK096144	AK096144 Homo sapi
27	144.4	8.2	156	6	AX261402	AX261402 Sequence
28	131.8	7.5	214308	2	AL732434	AL732434 Homo sapi
29	103.2	5.9	145430	2	AL845421	AL845421 Danio rer
30	103.2	5.9	192318	2	AL845339	AL845339 Danio rer
31	73.8	4.2	86827	3	PFMAL3P5	AL034556 Plasmodiu
32	70.8	4.0	139111	9	AL158048	AL158048 Human DNA
33	70.6	4.0	107289	2	AC116923	AC116923 Dictyoste
34	69.2	3.9	171187	2	AC116960	AC116960 Dictyoste
35	67.8	3.8	10213	3	PFU27338	U27338 Plasmodium
36	66.4	3.8	11829	3	AE001425	AE001425 Plasmodiu
37	66	3.7	110000	2	PFMAL13P2_2	Continuation (3 of
38	65.2	3.7	110000	2	PFMAL13P2_1	Continuation (2 of
39	65	3.7	113117	9	AL512288	AL512288 Human DNA
40	64.8	3.7	14867	3	AE001398	AE001398 Plasmodiu
41	64.8	3.7	92633	2	PFMAL4P1_3	Continuation (4 of
42	64.8	3.7	106434	3	AC117080	AC117080 Dictyoste
43	64.4	3.7	14551	6	AX281473	AX281473 Sequence
44	64	3.6	29016	2	AC117266	AC117266 Dictyoste
45	63.8	3.6	92376	8	AC006282	AC006282 Arabidops

ALIGNMENTS

RESULT 1

AR113044

LOCUS

DEFINITION

AR113044

ACCESSION

AR113044

VERSION

AR113044.1

KEYWORDS

Unknown.

ORGANISM

Unknown.

REFERENCE

1 (bases 1 to 1764)

AUTHORS

Bandman, O., Lal, P., Hillman, J.L., Corley, N.C., Guegler, K.J. and

Shah, P.

TITLE

Hydrolase enzymes

JOURNAL

Patent: US 6132964-A 13 17-OCT-2000;

AR113044

Sequence 13 from patent US 6132964.

1764 bp

DNA

linear

PAT 16-MAY-2001

Aligned Gunn 1/3

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Db 2543 TACTTGCTATAAAGCTCTTTGTGCTAAATATGCTCAAAATAGCTGTGAAA 2602
Qy 2677 ATAGCCGGGTTCCACTGGCTCTGCTGAGGTCCCTTTCTTCTGGGCTGTGAATTCCT 2736
Db 2603 ATAGCCGGGTTCCACTGGCTCTGCTGAGGTCCCTTTCTTCTGGGCTGTGAATTCCT 2662
Qy 2737 GTACATATTTCTCTACTCTTTTGTATGAGGCTTCAATCCATATGTTTAAATGTTGCTC 2796
Db 2663 GTACATATTTCTCTACTCTTTTGTATGAGGCTTCAATCCATATGTTTAAATGTTGCTC 2722
Qy 2797 TGAAGATGACTGTGATTTTCTTTTCTTTTAAACCATGAGACCGTTTTCACAGAG 2856
Db 2723 TGAAGATGACTGTGATTTTCTTTTCTTTTAAACCATGAGACCGTTTTCACAGAG 2782
Qy 2857 CATGCTCTGCTGTGTTGTTTCAACAGCTTCTGCTTCAATGACACAGGATTTAAACAC 2916
Db 2783 CATGCTCTGCTGTGTTGTTTCAACAGCTTCTGCTTCAATGACACAGGATTTAAACAC 2842
Qy 2917 AAAAAATATACTCAACTTCCCTTGTAGTCTCTATATAGTAGAGTCCCTTGGTACTCTG 2976
Db 2843 AAAAAATATACTCAACTTCCCTTGTAGTCTCTATATAGTAGAGTCCCTTGGTACTCTG 2902
Qy 2977 CCCTCTCTGTCAGTAGTGGCAGGATCTATTGTCATATTCGGAGCTTCTTAGAGGAGTAG 3036
Db 2903 CCCTCTCTGTCAGTAGTGGCAGGATCTATTGTCATATTCGGAGCTTCTTAGAGGAGTAG 2962
Qy 3037 GTTCTTTGAAACACAGTGAATAATTTAAATAGTAACTTTTTCGAAAGCAGTTTATGACTG 3096
Db 2963 GTTCTTTGAAACACAGTGAATAATTTAAATAGTAACTTTTTCGAAAGCAGTTTATGACTG 3022
Qy 3097 TTATTGTCAGAGAGTGAAGAAAGAAAGCCTGTTGGCAATCTCGGTATTTCTTTAA 3156
Db 3023 TTATTGTCAGAGAGTGAAGAAAGAAAGCCTGTTGGCAATCTCGGTATTTCTTTAA 3082
Qy 3157 GATTCTCTGGCAGTCTGGAGTGATGAATGAAGTGAATGTAATTTTGGCAGTTTAAAT 3216
Db 3083 GATTCTCTGGCAGTCTGGAGTGATGAATGAAGTGAATGTAATTTTGGCAGTTTAAAT 3142
Qy 3217 GGGACAGCTTCCATGTTCTTCTACCTCTTAACTGAATAAAAAGCCTACAGTTT 3276
Db 3143 GGGACAGCTTCCATGTTCTTCTTCTACCTCTTAACTGAATAAAAAGCCTACAGTTT 3202
Qy 3277 TAGAAAAA 3285
Db 3203 TAGAAAAA 3211

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RESULT 6

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AAV33501
ID AAV33501 standard; cDNA; 3220 BP.
XX AC AAV33501;
XX DE 18-JAN-1999 (first entry)
XX DT Human sodium-lithium countertransporter hSLIT-1 cDNA.
XX DE Sodium-lithium countertransporter; sodium-phosphate cotransporter;
XX KW P.I.T-1; human; leukaemia virus receptor 1; lithium therapy;
XX KW manic depression; 88.
XX OS Homo sapiens.
XX FH Key Location/Qualifiers
XX CDS 371..2410
XX FT /*cag= a
XX FT /product= leukaemia virus receptor 1
XX PN W09838203-A1.
XX PD 03-SEP-1998.
XX 01-FEB-1998; 98WO-US02875.

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XX 27-FEB-1997; 97US-0039462.
XX (UYEM-) UNIV EMORY.
XX PI Gunn RB, Timmer RT;
XX DR WPI; 1998-520759/44.
XX DR P-PSDB; AAW70498.
XX PT New isolated lithium-sodium counter-transporter DNA - used to
XX develop products for evaluating lithium-sodium transport in
XX erythrocytes, particularly for lithium therapy in manic depression.
XX Claim 3; Page 35-37; 64pp; English.
XX CC This DNA molecule encodes human lithium-sodium countertransporter
XX (SLIT-1 (see AAW70498)). Human Pit-1 is also a sodium-phosphate
XX cotransporter and a human amphotrophic retrovirus receptor
XX (leukaemia virus receptor 1). LSCs such as Pit-1 provide the
XX physiological mechanism for the extrusion of lithium from cells,
XX i.e. it regulates the cell concentration of lithium. Its activity
XX determines the therapeutic effect of lithium. The invention
XX provides a simple molecular biological test for the ability of
XX cells to extrude lithium. The LSCs have significance for
XX determining the responsiveness of humans with mental disorders,
XX including manic depressives to treatment with lithium salts.
XX Probes and primers for Pit-1, Pit-2 (see AAV33502) and ENPI (see
XX AAV33503) can be used in diagnostic tests useful for genetic
XX screenings to predict whether a patient will respond to lithium
XX treatment. The test is also a screen for susceptibility to, and
XX extent of, manic depressive illness, and is suitable for screening
XX newborns.
XX SQ Sequence 3220 BP; 784 A; 710 C; 762 G; 964 T; 0 other;

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Query Match 96.5%; Score 3173.6; DB 19; Length 3220;
Best Local Similarity 99.7%; Pred. No. 0;
Matches 3181; Conservative 0; Mismatches 7; Indels 1; Gaps 1;
Qy 97 CGACCCCGGGCGGTGGTCCAGCGCTCCAGCGCTCCGCTCGATCTCTCTCCGCAATTC 156
Db 24 CGGGCGGTGGTGGTCCAGCGCTCCAGCGCTCCGCTCGATCTCTCTCCGCTCCCG 83
Qy 157 CTCCGCGCTCCCTTTCCCTGGATGAATGGTGGCTTTCTCTCTCCGCAATTC 216
Db 84 CTCCGCGCTCCCTTTCCCTGGATGAATGGTGGCTTTCTCTCTCCGCAATTC 143
Qy 217 TGCTCGGTGCTTTTAGCCCTCTGAGCCAAAGAAACCCAGACACAGATGCCATACGC 276
Db 144 TGCTCGGTGCTTTTAGCCCTCTGAGCCAAAGAAACCCAGACACAGATGCCATACGC 203
Qy 277 AGCGTATAGCAGTAACCTCCCGAGCTCGGTTTCTGTCCGCTAGTTTACAGTATTTT 336
Db 204 AGCGTATAGCAGTAACCTCCCGAGCTCGGTTTCTGTCCGCTAGTTTACAGTATTTT 263
Qy 337 ATATAATATATATATTTATATAGCATTTTGTATACCTCATATTTCTTTTACACATCTT 396
Db 264 ATATAATATATATATTTATATAGCATTTTGTATACCTCATATTTCTTTTACACATCTT 323
Qy 397 GAAAGCGCTCAGTAGTTCTTTTACTAAACAAACCACTACTCCAGAGAAATGGCAACGTGA 456
Db 324 GAAAGCGCTCAGTAGTTCTTTTACTAAACAAACCACTACTCCAGAGAAATGGCAACGTGA 383
Qy 457 TTACCACTACTACAGCTGCTACCGCGCTTCTGGTCTTTTGTGGACTACTATGGATGC 516
Db 384 TTACCACTACTACAGCTGCTACCGCGCTTCTGGTCTTTTGTGGACTACTATGGATGC 443
Qy 517 TCATCTCGGCTTCATTTATTTGATTTGCTTTGTCATTTCTCCGTTGGAGCAATGATGTAG 576
Db 444 TCATCTCGGCTTCATTTATTTGATTTGCTTTGTCATTTCTCCGTTGGAGCAATGATGTAG 503
Qy 577 CAAATTTCTTTTGGTACAGCTGTGGGCTCAGGTGTAGTGACCTGAGCAAGCCTGCATCC 636

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Alignment Guns 243

Db	504	CAAAATCTCTTTGGTACAGCTGTGGGCTCAGTGTAGTGAACCTTAAGCAAGCCTGCATCC	563
Qy	637	TAGCTAGCATCTTTGAAACAAGTGGGCTCTGTCTTACTGGGGGCCAAAGTAGCGGAAACCA	696
Db	564	TAGCTAGCATCTTTGAAACAAGTGGGCTCTGTCTTACTGGGGGCCAAAGTAGCGGAAACCA	623
Qy	697	TCGGGAAGGGCTTGAATTTGACGTGGAGATGACAACTCGACTCAAGGGCTACTGATGGCCG	756
Db	624	TCGGGAAGGGCTTGAATTTGACGTGGAGATGACAACTCGACTCAAGGGCTACTGATGGCCG	683
Qy	757	GCTCAGTCAGTCTATGTTTGGTTCGTGTGTGGCAACTCGTGGCTTCGTTTTTGAAGC	816
Db	684	GCTCAGTCAGTCTATGTTTGGTTCGTGTGTGGCAACTCGTGGCTTCGTTTTTGAAGC	743
Qy	817	TCCTATTTCTGGAACCCATCTGATTTGTTGGTGCAACTATTTGGTTTCTCCTCGTGGCAA	876
Db	744	TCCTATTTCTGGAACCCATCTGATTTGTTGGTGCAACTATTTGGTTTCTCCTCGTGGCAA	803
Qy	877	AGGGGAGAGGGGTGTCAAGTGTCTGAACCTGATAAAATTTGATCTCTCGTGGTGCATTCATCC	936
Db	804	AGGGGAGAGGGGTGTCAAGTGTCTGAACCTGATAAAATTTGATCTCTCGTGGTGCATTCATCC	863
Qy	937	CCCCACTGCTTCTGGAAATTAATGCTTGGAAATTTTATTTCTTCTCGTGGTGCATTCATCC	996
Db	864	CCCCACTGCTTCTGGAAATTAATGCTTGGAAATTTTATTTCTTCTCGTGGTGCATTCATCC	923
Qy	997	TCCATAAGGCAGATCCAGTTCCTTAATGTTTGGAGCTTTGCCAGTTCCTATGCTGCA	1056
Db	924	TCCATAAGGCAGATCCAGTTCCTTAATGTTTGGAGCTTTGCCAGTTCCTATGCTGCA	983
Qy	1057	CAGTTGGAAATAAACCCTCTTTTCCATCATGTATACTGGAGCACCGTTCGTGGGCTTTGACA	1116
Db	984	CAGTTGGAAATAAACCCTCTTTTCCATCATGTATACTGGAGCACCGTTCGTGGGCTTTGACA	1043
Qy	1117	AACCTCTCTGTGGGGTACCATCCTCATCTCGTGGGATGTGCAGTTTTCTGTGCCCTTA	1176
Db	1044	AACCTCTCTGTGGGGTACCATCCTCATCTCGTGGGATGTGCAGTTTTCTGTGCCCTTA	1103
Qy	1177	TCGTCCTGTTCTTTGTATGTCCAGAGTGAAGAGAAAAATTTGAAACGAGAAATAAAGTGA	1236
Db	1104	TCGTCCTGTTCTTTGTATGTCCAGAGTGAAGAGAAAAATTTGAAACGAGAAATAAAGTGA	1163
Qy	1237	GTCCCTCTGAAGCCCTTAAATGGAATAAAGATAGCTTTGAAAGAACCATGAGAAA	1296
Db	1164	GTCCCTCTGAAGCCCTTAAATGGAATAAAGATAGCTTTGAAAGAACCATGAGAAA	1223
Qy	1297	CAAAAGTTGCTGTGTGTGATATTGAAAAACAAGCATCCTGTTTCTGAGGTAGGGCTGCCA	1356
Db	1224	CAAAAGTTGCTGTGTGTGATATTGAAAAACAAGCATCCTGTTTCTGAGGTAGGGCTGCCA	1283
Qy	1357	CTGTGCCCTTCCAGGCTGTGGTGGAGGAGAAACAGTCTCATTTCAAAGTTGGAGTTGG	1416
Db	1284	CTGTGCCCTTCCAGGCTGTGGTGGAGGAGAAACAGTCTCATTTCAAAGTTGGAGTTGG	1343
Qy	1417	AGGAAGCTCCAGAGAGAGAGGGCTTCCAGCGTGGACTTCAAAAGAGAAACAGCATAG	1476
Db	1344	AGGAAGCTCCAGAGAGAGAGGGCTTCCAGCGTGGACTTCAAAAGAGAAACAGCATAG	1403
Qy	1477	ATAGACACCGTGAATGGTCAGTGCAGTTGCCCTAATGGGAACCTTGTCCAGTTCAAGTCAAG	1536
Db	1404	ATAGACACCGTGAATGGTCAGTGCAGTTGCCCTAATGGGAACCTTGTCCAGTTCAAGTCAAG	1463
Qy	1537	CCGTGAGCAACCAATAAAGCTTCCAGTGGCCTACTACAGTATCCACCGTGCATAAGGATT	1596
Db	1464	CCGTGAGCAACCAATAAAGCTTCCAGTGGCCTACTACAGTATCCACCGTGCATAAGGATT	1523
Qy	1597	CGGGCTGTGAAGAAGAGTACTCCATAAAATTTACATCTTTGCCAAAGTGGGAGATTGCATGG	1656
Db	1524	CGGGCTGTGAAGAAGAGTACTCCATAAAATTTACATCTTTGCCAAAGTGGGAGATTGCATGG	1583
Qy	1657	GAGACTCCGGTGCACAAACCTTAAGGGCGCAATTAATAGCTATATCTTCTATACCATGGCAA	1716

Db	1584	GAGACTCCGGTGCACAAACCCCTTAAGGCCCAATAATAGCTATACCTTCTATACCATGGCAA	1643
Qy	1717	TATGTGGCATGCCCTCTGATTCATTCGGTGCCAAAGAGGTGAACAGAAAGCGCGAAGAAA	1776
Db	1644	TATGTGGCATGCCCTCTGATTCATTCGGTGCCAAAGAGGTGAACAGAAAGCGCGAAGAAA	1703
Qy	1777	TGGAGAAGCTGACATGGCCTAATACGAGACTCCAAAGAGCGAATTCGAATGACAGATTACA	1836
Db	1704	TGGAGAAGCTGACATGGCCTAATACGAGACTCCAAAGAGCGAATTCGAATGACAGATTACA	1763
Qy	1837	CCAGTTACTGCAATGCTGTGTGACCTTCACTCAGCATCTGAGATAGACATGAGTGCTCA	1896
Db	1764	CCAGTTACTGCAATGCTGTGTGACCTTCACTCAGCATCTGAGATAGACATGAGTGCTCA	1823
Qy	1897	AGGCAGAGATGGGTCTAGGTGACAGAAAGGAAGTAATGGCTCTCTAGAAAGATGGTATG	1956
Db	1824	AGGCAGAGATGGGTCTAGGTGACAGAAAGGAAGTAATGGCTCTCTAGAAAGATGGTATG	1883
Qy	1957	ACCAGGATAAGCTGGAAGTCTCTCTCTCTTCCAGTTCCTGCGAGATCCCTTACAGCCTGCT	2019
Db	1884	ACCAGGATAAGCTGGAAGTCTCTCTCTCTTCCAGTTCCTGCGAGATCCCTTACAGCCTGCT	1945
Qy	2017	TTGGGTCATTGCGCCATGTGGCAATGACGTAAAGCAATGCCATTTGGGCCCTCTGGTTGCTT	2076
Db	1944	TTGGGTCATTGCGCCATGTGGCAATGACGTAAAGCAATGCCATTTGGGCCCTCTGGTTGCTT	2003
Qy	2077	TATATTTGGTTTATGACACAGGAGATGTTTCTTCAAAAGTGGCAACACCAATATGCTTC	2136
Db	2004	TATATTTGGTTTATGACACAGGAGATGTTTCTTCAAAAGTGGCAACACCAATATGCTTC	2063
Qy	2137	TACTCTATGGTGGTGTGGTATCTGTGTGGTCTGTGGGTTTGGGGAAGAGATTATCC	2196
Db	2064	TACTCTATGGTGGTGTGGTATCTGTGTGGTCTGTGGGTTTGGGGAAGAGATTATCC	2123
Qy	2197	AGACCATGGGAAGAGATCTGCACCGATCAACCCCTTAGTGGCTTCAGTATTGAACATGG	2256
Db	2124	AGACCATGGGAAGAGATCTGCACCGATCAACCCCTTAGTGGCTTCAGTATTGAACATGG	2183
Qy	2257	CATCTGCCCTCACTGTGGTGTATGTCATCAAAATATTGGCCCTTCCCATCTAGTACAAACATTT	2316
Db	2184	CATCTGCCCTCACTGTGGTGTATGTCATCAAAATATTGGCCCTTCCCATCTAGTACAAACATTT	2243
Qy	2317	GTAAGTGGGCTCTGTGTGTCTGTGGCTGGCTCCGGTCCAGAAAGGCTGTGACTGGC	2376
Db	2244	GTAAGTGGGCTCTGTGTGTCTGTGGCTGGCTCCGGTCCAGAAAGGCTGTGACTGGC	2303
Qy	2377	GTCTCTTTGCTAAACATTTTATGCGCTGTTTGTGCACAGTCCCATTTCTGGAGATTACA	2436
Db	2304	GTCTCTTTGCTAAACATTTTATGCGCTGTTTGTGCACAGTCCCATTTCTGGAGATTACA	2363
Qy	2437	GTGCTGCCATCATGGCAATCTTCAGATATGTCATCTCTCAGAAATGTGAAGCTGTTTGAGAT	2496
Db	2364	GTGCTGCCATCATGGCAATCTTCAGATATGTCATCTCTCAGAAATGTGAAGCTGTTTGAGAT	2423
Qy	2497	TAAAAATTGTGTCAAATGTTTGGGACCATCTTAGTATCTCTGCTCCCTTGAAGATGATT	2556
Db	2424	TAAAAATTGTGTCAAATGTTTGGGACCATCTTAGTATCTCTGCTCCCTTGAAGATGATT	2483
Qy	2557	ACAGTGTAAACAGAAGACTGACAAAGTCTTTTATTTTGGAGCCAGAGAGGGAAGTGT	2616
Db	2484	ACAGTGTAAACAGAAGACTGACAAAGTCTTTTATTTTGGAGCCAGAGAGGGAAGTGT	2542
Qy	2617	TACTTGTCTATAACCTGCTTTTGTGCTAAATATGAAATGCTCTCAAAATAGCTGTGTA	2676
Db	2543	TACTTGTCTATAACCTGCTTTTGTGCTAAATATGAAATGCTCTCAAAATAGCTGTGTA	2602
Qy	2677	ATAGCCCGGGTTCACCTGGCTCCTCTGAGGTCCCTTTTCTTCTGGGCTGTGAATTCCT	2736
Db	2603	ATAGCCCGGGTTCACCTGGCTCCTCTGAGGTCCCTTTTCTTCTGGGCTGTGAATTCCT	2662
Qy	2737	GTACATATTTCTCTACTTTTGTATCAGGCTTCAATTCATTTATGTTTATGTTGCTC	2796
Db	2663	GTACATATTTCTCTACTTTTGTATCAGGCTTCAATTCATTTATGTTTATGTTGCTC	2722

7

Aligned Gun 3/3

2797 TGAAGATGACTGTGATTTTCTTTTAAACCATGAGAGCGGTTGACAGAG 2856
2723 TGAAGATGACTGTGATTTTCTTTTAAACCATGAGAGCGGTTGACAGAG 2782
2857 CATGCTGCGGTTGTTTACACAGCTTCCGCTCACATGACAGGGATTAAACAA 2916
2783 CATGCTGCGGTTGTTTACACAGCTTCCGCTCACATGACAGGGATTAAACAA 2842
2917 AAAAATAAATACTACAACCTTCCCTGTAGTCTCTTATAAGTACAGTCTTGGTACTG 2976
2843 AAAAATAAATACTACAACCTTCCCTGTAGTCTCTTATAAGTACAGTCTTGGTACTG 2902
2977 CCTCTCTGTCAGTATGAGGAGATCTATTGGCATATTGGGAGCTTCTAGAGGATGAG 3036
2903 CCTCTCTGTCAGTATGAGGAGATCTATTGGCATATTGGGAGCTTCTAGAGGATGAG 2962
3037 GTTCTTTGAACACAGTGAATAATTAATTAAGTAACTTTTTCGACGAGTATTATGACTG 3096
2963 GTTCTTTGAACACAGTGAATAATTAATTAAGTAACTTTTTCGACGAGTATTATGACTG 3022
3097 TTATTCTAAGAAGAGTGAATAATTAATTAAGTAACTTTTTCGACGAGTATTATGACTG 3156
3023 TTATTCTAAGAAGAGTGAATAATTAATTAAGTAACTTTTTCGACGAGTATTATGACTG 3082
3157 GATTCTGCGAGTGTGGATGGAATGAATGAATGAATGAATGAATGAATGAATGAAT 3216
3083 GATTCTGCGAGTGTGGATGGAATGAATGAATGAATGAATGAATGAATGAATGAAT 3142
3217 GGCACAGCTTCCATGTTTCTGCTTACCTCTTAACCTGAATAAAAAAGCTACAGTTT 3276
3143 GGCACAGCTTCCATGTTTCTGCTTACCTCTTAACCTGAATAAAAAAGCTACAGTTT 3202
3277 TAGAAAAA 3285
3203 TAGAAAAA 3211

RESULT 7
AAQ10676
ID AAQ10676 standard; DNA; 3211 BP.
AC AAQ10676;
XX 26-APR-1991 (first entry)
DT Human gibbon ape leukaemia virus receptor gene.
XX Human gibbon ape leukaemia virus receptor; GALV; retroviruses; ss.
XX Homo sapiens.
OS
FH Key Location/Qualifiers
FT CDS 371..2410 /*tag= a
FT /product= Human GALV receptor protein
XX EP414035-A.
XX
XX 27-FEB-1989.
PD
XX 14-AUG-1990; 90EP-0115136.
PF
XX 24-AUG-1989; 89US-0398351.
PR
XX (AMCY) AMERICAN CYANAMID CO.
PA
XX O'Hara BM;
PI
XX WPI; 1991-059307/09.
XX P-PSDB; AAR10848.
DR
XX gibbon ape leukaemia virus receptor isolated from different sources

PT - capable of regulating viral entry into cells
XX Disclosure; page 8; 26pp; English.
XX This human gibbon ape leukaemia virus (GALV) receptor gene encodes
CC a GALV receptor protein required for the entry of the virus into
CC cells. Manipulation of the receptor sequence could therefore result
CC in regulation of retroviral infection of cells. This gene and the
CC protein prod. are useful in analysis of virus/receptor interaction.
XX Sequence 3211 BP; 781 A; 708 C; 760 G; 962 T; 0 other;
SQ
Query Match 96.4%; Score 3172; DB 12; Length 3211;
Best Local Similarity 99.7%; Pred. No. 0;
Matches 3180; Conservative 0; Mismatches 8; Indels 1; Gaps 1;
QY 97 CCGACCCGGGCGGTGCGCGGTCCAGCGCTCCAGCGCTCGATCTCTCTCGTCTCCCG 156
DB 24 CCGGCGCGGTGCGCGGTCCAGCGCTCCAGCGCTCGATCTCTCTCGTCTCCCG 83
QY 157 CTGCGCCCTCCCTTTTCCCTGGATGAATTCGCTCTCTCTCTCTCTCTCTCTCTCT 216
DB 84 CTGCGCCCTCCCTTTTCCCTGGATGAATTCGCTCTCTCTCTCTCTCTCTCTCTCT 143
QY 217 TGCTCCGCTCTTTAGCCCTCTGAGCCAAAGAAACCCAGACAGATGCCATACGC 276
DB 144 TGCTCCGCTCTTTAGCCCTCTGAGCCAAAGAAACCCAGACAGATGCCATACGC 203
QY 277 AGCGTATAGCAGTAACTCCCGAGCTCGGTTCTGTGCGGTAGTTTACAGTATTATTTT 336
DB 204 AGCGTATAGCAGTAACTCCCGAGCTCGGTTCTGTGCGGTAGTTTACAGTATTATTT 263
QY 337 ATATAATATATATTTTATATATAGCACTTTTATAGCACTTCTGTATTACATCTT 396
DB 264 ATATAATATATATTTTATATAGCACTTTTATAGCACTTCTGTATTACATCTT 323
QY 397 GAAAGCGCTCAGTAGTCTCTTACTTAACACCACTACTCCAGAGAAATGGCAACGGTGA 456
DB 324 GAAAGCGCTCAGTAGTCTCTTACTTAACACCACTACTCCAGAGAAATGGCAACGGTGA 383
QY 457 TTACACAGTACTCAGCTGCTTACCGCGCTTCTGGTCTCTTGTGGACTACCTATGATGC 516
DB 384 TTACACAGTACTCAGCTGCTTACCGCGCTTCTGGTCTCTTGTGGACTACCTATGATGC 443
QY 517 TCATCTCGGCTTCATTAATGCAATTTGCTTGGCAATTTCTCGTGGAGCAATGATGTAG 576
DB 444 TCATCTCGGCTTCATTAATGCAATTTGCTTGGCAATTTCTCGTGGAGCAATGATGTAG 503
QY 577 CAATCTTTTGTGACAGCTGCGGCTCAGGTGTAGTGACCTGAAAGCAAGCCCTGCATCC 636
DB 504 CAATCTTTTGTGACAGCTGCGGCTCAGGTGTAGTGACCTGAAAGCAAGCCCTGCATCC 563
QY 637 TAGCTAGCATCTTTGAAACAGTGGGCTCTCTTCTTACTGGGGGCAAAAGTGAGCGAAACCA 696
DB 564 TAGCTAGCATCTTTGAAACAGTGGGCTCTCTTCTTACTGGGGGCAAAAGTGAGCGAAACCA 623
QY 697 TCCGGAAGGGCTTGAATGAGTGAGATGTACAACCTGCACTCAAGGCTACTGATGGCGG 756
DB 624 TCCGGAAGGGCTTGAATGAGTGAGATGTACAACCTGCACTCAAGGCTACTGATGGCGG 683
QY 757 GCTCAGTCAGTCTATGTTGGTCTGCTGTGGCAACTCTGCTCTCTCTCTCTCTCTCTCT 816
DB 684 GCTCAGTCAGTCTATGTTGGTCTGCTGTGGCAACTCTGCTCTCTCTCTCTCTCTCTCT 743
QY 817 TCCCTATTTCTGGAAACCCATTTGTTTGTGCAACTATTGGTTTCTCTCTCTCTCTCT 876
DB 744 TCCCTATTTCTGGAAACCCATTTGTTTGTGCAACTATTGGTTTCTCTCTCTCTCTCT 803
QY 877 AGGGCAGAGGGTGTCAAGTGGTCTGAATGATAAAAATTTGTGATGTTCTGGTTCGTGT 936
DB 804 AGGGCAGAGGGTGTCAAGTGGTCTGAATGATAAAAATTTGTGATGTTCTGGTTCGTGT 863
QY 937 CCCCACTGTTCTCGAATATATGCTCGGAAATTTTATTCTCTCTCTCTCTCTCTCTCT 996